



# Proposal Guidelines

Eric Smith, Virginia Ford  
and  
Mansoor Ahmed

# Proposal Guidelines

- The “*Guidebook for Proposers Responding to a NASA Research Announcement*” provides generic guidelines for responding to this NRA
  - Use 2004 “*Guidebook for Proposers*” for this NRA
- This package provides additional guidelines that are specific to the TPF-C project
- The additional information will allow the proposals to be relevant to TPF-C needs
- The additional evaluation criteria will allow a fair comparison of proposals relative to TPF-C needs
- The additional deliverables will allow the final product to be most useful for the mission level design and feasibility studies



# General Proposal Evaluation Criteria



## Evaluation Factors

- 1) Unless otherwise specified in the NRA, the principal elements (of approximately equal weight) considered in evaluating a proposal are its **intrinsic merit**, its **relevance to NASA's objectives**, and its cost
- 2) Evaluation of a proposal's **relevance to NASA's objectives** includes the consideration of the potential contribution of the effort to NASA's mission as expressed in its most recent NASA strategy documents
- 3) Evaluation of **intrinsic merit** includes consideration of the following factors:
  - Overall scientific or technical merit of the proposal and/or unique and innovative methods, approaches, concepts, or advanced technologies;
  - Offeror's capabilities, related experience, facilities, techniques, or unique combination of these for achieving the proposal's objectives;
  - The qualifications, capabilities, and experience of the proposed principal investigator, team leader, or key personnel critical in achieving the proposal objectives; and
  - Overall standing among similar proposals and/or evaluation against the state-of-the-art

# Proposal Evaluation Process

## Evaluation Process

- Peer review
  - “... proposals submitted to NASA are almost always reviewed by panels composed of the proposer's professional peers who have been screened for conflicts of interest. ...”


Evaluation	Basis for Evaluation
Excellent	Comprehensive, thorough, and compelling proposal of exceptional merit, fully responds to the objectives of the NRA, numerous and/or significant strengths, no major weaknesses
Very Good	Fully competent proposal of very high merit, fully responds to the objectives of the NRA, strengths fully outbalance any minor weaknesses, no major weaknesses
Good	Competent proposal, credible response to the NRA, has neither significant strengths nor weakness, minor strengths and weaknesses essentially balance
Fair	Proposal that provides a nominal response to the NRA but whose weaknesses outweigh any perceived strengths
Poor	Seriously flawed proposal having one or more major weaknesses

# Additional Proposal Information Requested



- **Science Investigations Objectives**
  - Describe the **intended science** and its relationship to the TPF Coronagraph science goals.
- **Preliminary Description of the Proposed Instrument and its Components**
  - Assumptions made on the **interfaces and resources** required by the instrument from the observatory
  - Preliminary assessment of **the impact** of the instrument on the starlight suppression system
- **Management Plan for the Study Phase**
  - Description of the proposed study effort including **schedule of tasks** within the study (cost breakdown is required in the “Guidebook for Proposers Responding to a NASA Research Announcement”)
  - Description of the proposed **performance analysis** approach
  - Discussion of the **technical maturity** of the proposed system and its components, and a preliminary plan for maturing the technology if needed

# Additional Proposal Evaluation Criteria

- 
- **Strength of the scientific investigation** related to the scientific goals of TPF
  - **Instrument description**
  - Preliminary estimate of any **impact** of the instrument on starlight suppression capability and on the observatory
  - **Plan** for the study phase
  - **Technical maturity** of the proposed system and components
  - Preliminary **technology plan** for developing any immature technologies



# Study Phase Deliverables



Terrestrial Planet Finder

TPF

- Instrument **performance assessment**
- **Analysis and assumptions** that lead to the performance prediction
- Instrument **design concept**
- Analysis/performance **data** and assumptions
- Proposed **instrument impact** that affects the starlight suppression capability of the observatory facility.



# Details – Study Phase Instrument Design Deliverables ( Where applicable and if available)



Terrestrial Planet Finder

TPF

- **Instrument Performance Parameters:**
  - Observing scenario
  - Signal to noise ratio
  - Exposure time
  - Sensitivity to stray light
  - Sensitivity to stability
  - Sensitivity to incoming wave front error
  - Sensitivity to alignment accuracy of the instrument to the telescope
- **Data on Parameters that may affect observatory stability:**
  - Thermal load and cooling requirements
  - Thermal interface requirements
  - Predicted power profile variation
  - Predicted dynamic disturbances at interfaces and timeline
- **Information impacting system design of TPF-C**
  - List of assumptions which form the basis of the instrument design
  - Estimates for mass, power and volume breakdown
  - Description of electronics and data systems
- **Information impacting the TPF-C Technology Maturity**
  - Assessment of the proposed instrument technology maturity, with justification.
  - Evaluation of the technology risk, and associated mitigation plans
  - Implementation and demonstrated current progress towards the proposed technology plan
- **Preliminary concept for pre-flight instrument performance verification**





# Study Phase Instrument Modeling Deliverables

## (Where applicable and if available)



TPF  
Terrestrial Planet Finder

- Preliminary instrument error budget
  - Include evaluation of engineering design drivers required to meet science performance goals.
- Details of models
  - Include associated data and assumptions used to derive reported performances
  - Instrument CAD models, optical prescription, or any model used to assess instrument performance
  - All models and data are to be delivered in MKS units
- Sample analysis illustrating performance result
- List of prevailing assumptions used for analysis, including boundary conditions
- Material property list and data (or references to source of data) including error bounds
- Comment on level of fidelity of model predictions and estimate of expected error bounds
  - Identify which aspects of models are most uncertain.
- Model prediction validation or verification:
  - Provide test data that verifies accuracy of model prediction
  - Alternatively, describe what tests performed in later phases of the project would validate model accuracy